

REMARKS

The prior claims 1-11, and 13-16 have been canceled from the Application without the intent to acquiesce to the grounds of rejection thereto, but for the purpose of placing the newly submitted claims 17-25 in better condition for review and acceptance by the PTO. Claim 12 has been amended to place the same in condition for allowance.

The Applicant responds to the PTO rejections per 35 U.S.C. 102(b) and 35 U.S.C. 103(a) hereinafter and aids in explaining what appears to be misinterpretations and misapplications of prior-art as related to the 35 U.S.C. rejections.

Response to Item 1 DRAWINGS: The Applicant appreciates and agrees with PTO findings stated in Reference to 37 CFR 1.83(a). New 37 CFR 1.121(d) appropriate drawings are submitted herein with particular attention to showing (d1), (d2), (L1), (L2) and (L3) as requested. Withdrawal of the objection is kindly requested.

Response to Item 2 DRAWINGS: The Applicant appreciates and agrees with PTO findings stated in Reference to 37 CFR 1.83(a). An additional 37 CFR 1.121(d) compliant drawing sheet now shows views of previously disclosed combinations for divisible mouthpiece sections. Withdrawal of the objection is kindly requested.

Response to Item 3 INDEFINITE PHRASES: The Applicant appreciates and agrees with PTO findings as to claims 3-5,7-8, 9-11, 14, and 16. The new claims are believed to overcome any indefinite rejection previously made. Withdrawal of the objections is kindly requested.

Response to Item 4 INDEFINITE PHRASES: The Applicant appreciates and agrees with PTO findings as to claims, 9, 10, and 11. The new claims are believed to overcome any indefinite rejection previously made. Withdrawal of the objections is kindly requested.

Response to Items 5 and 6 **35 U.S.C 102 REJECTIONS**

The Examiner rejected claims 1-2, 6-7, 13-14 and 16 under 35 U.S.C. 102(b). All such claims have been cancelled and new claims 17-25 have been added and the grounds of the rejection addressed herein. The new claims are submitted to be patentably distinct over the art and withdrawal of the rejections is kindly requested.

In order to properly consider the allowability Applicant's Claims, Applicant will attempt to explain an apparent misunderstanding of the Applicant usage for the words "set" and sets". These words are first used and defined on page three of the Specification and then carefully used again 39 times more. The words "set" and "sets" always refer to a plurality of mouthpieces used for a *singular kind of brass wind instrument*. The PTO has used a definition of "sets" in a much broader context in considering patentability of the prior claims. Applicant's new claims are believed to clarify this issue and to remove any ambiguity of the meaning so defined.

NO SETS OR PLURALITIES IN BACH IDS

Applicant addresses the prior art as follows. Bach does not "disclose a multiplicity of sets of brass-wind mouthpieces", as the Applicant's specification defines these terms. Using the Applicant's clear definition of sets, there are no sets shown in the Vincent Bach 1956 IDS #14 reference. In Bach, there is only one mouthpiece shown for each distinct kind of brass-wind instrument . . . in other words 12 individual and *non-related* mouthpieces are shown. Musicians do not perform, for example, with a Trumpet mouthpiece affixed onto an Alto horn in E-flat. Forty-seven years later IDS #18 of Bach shows exactly the same outer dimensions as the 1956 models, with the addition of single Mega-Tone

mouthpiece bodies for some instruments. Mega-Tone mouthpieces vary in the thickness of ornamental portion of the exterior.

The paragraph above helps explains why, in Bach, there is no “plurality of bodies each having said separate volumetric cup-chambers sizes”. It is contrary to the definitions and methods of the instant invention as explained in the specification to compare volumes amongst mouthpieces from *different kinds* of instruments. Trumpet volumes, for example, have no useful relationship to volumes of any other brass-instrument and vice versa. They are all separate and independent. Each kind of instrument requires “separate sets” as clearly stated. When mixed across different kinds of brass-instruments, mouthpieces cannot form a working “plurality” as the Applicant utilizes “plurality” in the specification and claims. Knowing about differences amongst the different types of brass-wind mouthpieces is *fundamental* to the basic training and to the standard knowledge of mouthpiece artisans.

NO USEABLE TEACHING IN BACH

Lengths of dissimilar Bach mouthpieces in IDS #14 or #18 cannot be compared amongst different kinds of brass-wind instruments for the same reasons stated above. Mouthpieces for different kinds of brass-wind instruments are not acoustically interrelated and *not comparable as a “plurality”, in the sense that the PTO has rejected the claim*. As now claimed, an implied “plurality” is clarified to call to members of a specific kind of brass wind instrument, for example, trumpets. Thus, no “sets” are shown in Bach nor is there “anticipation” by Bach.

The individual mouthpieces of Bach in IDS #14 or #18 should not be juxtaposed for comparison, again, because it violates the definition of “sets” in the Specification. *The PTO’s cross-comparison of length and implied volume of the independent Bach mouthpieces traverses the spirit and teaching by the Applicant*. While a group of commercially-available Bach trumpet mouthpieces, for example, could possibly form a valid prior-art set, the members of such a set always have inner proportions that follow the ancient principle of direct

proportionality. Such prior-art sets are of substantially equal length with common end-taper sizes.....not at all like the ascending multi-length designs of the Applicant's "sets".

Bach mouthpieces cited by the PTO can not be compared to any other IDS-cited Bach mouthpieces, because not one of them belongs to a single inter-related set of mouthpieces, as the Applicant has defined "set". It is also noted that the cited reference does not provide any usable teaching to arrive the volumes described for the set of the instant invention, rather it only provides a poorly-scaled photographic artwork.

Resonant frequency cannot be determined or approximated by looking at photographs of the art. Resonant frequency is not mentioned by Bach references, and it would not have been mentioned in 1956. The true nature of mouthpiece resonance became understood only by a few scientists starting in about the year 1970. Some aspects are still hotly debated to this day. Even now, prior-art mouthpiece makers, as a whole, are amazingly ignorant as to what a fundamental resonant frequency might be or how it might be useful.....shocking, but true. See Rule 132 Affidavit.

PRIOR ART TEACHES AWAY

A proper interpretation of prior art does not render an anticipation of Applicant's invention. Prior art consistently teaches away from the Applicant's invention. Even mutli-part mouthpieces from prior art use fixed length components for a single kind of instrument. *The cited art fails to show a single set of undivided mouthpieces (for a single kind of brass-wind instrument) in which members of such a set vary in length. Prior art teaches away from the concept of "constant volumetric size" or "inverse proportions".* It is only the Applicant's teaching which explain and show such features of a set are determined.

Response to Items 7 and 8

35 U.S.C 103 REJECTIONS

The Examiner rejected claims 3-5 and 8 under U.S.C. 103(a) as unpatentable over Bach in view of Shepley. All such claims have been cancelled and new claims 17-25 have been added and the grounds of the rejection addressed herein. The new claims are submitted to be patentably distinct over the art and withdrawal of the rejections is kindly requested.

Shepley's usage of the word "section" as applied to mouthpieces is clearly referring to an "undivided" region and they are constrained within a fixed-length "cup part" labeled as cup 14. Shepley's sections (elements #42 to 48) only define the cup shape within the cup part in discrete steps of about 15 degrees in angle, rather than the smooth shape normally seen in prior-art cup shapes. These sections provide no basis for rejection.

SHEPLEY MIS-READ, MIS-INTERPRETED, AND MIS-APPLIED

The Examiner asserts that Shepley teaches "divisible sections". This is incorrect. Shepley merely insists on using separate prior-art parts (rim, cup, backbore) as a convenience for the most wide-spread usage of his primary invention in the undivided cup region. Separate rims, cups, and backbore were common as a custom feature for 20-30 years before Shepley. Bach, Giardinelli, Reeves, and Schilke, etc, all had similar divisible parts, and those parts were for designs of standard fixed-length. See Rule 132 Affidavit.

Again, it is stressed that *within the context of a set* as defined in the instant invention, neither Shepley alone or in combination with Bach teaches use of "divisible sections" "for varying the length of separate sections". Shepley's "sections" within a cup are not separate, separable, or divisible. Shepley's "sections" come from a different region of mouthpiece than what the Applicant calls "separable sections". In Shepley, cup sections #42 to 48 only change relative to element 50 to make his fixed-length-cup larger or smaller in volume. The Applicant does not use variable "sections" within the cup region of his inversely-proportioned mouthpieces.

Shepley states “cup 14, backbore 16, and rim 12 are all detachable ... advantageously allowing a somewhat *standardization of the rim 12 and backbore 16*” for merely “practical versatility of the mouthpiece” (col.3, line 55). Further, in col. 3, line 36, Shepley says, “the depth of cup 14 does not change.” Shepley’s invention is merely a conventional fixed-length mouthpiece that features a “sectional” cup geometry. Shepley’s “versatility” relates to the features seen in the Applicant’s IDS of U.S. Patent #1,178,513 of Charles E. George (1916), for example, where the rim or cup parts can be adapted for a cornet. *Nothing is disclosed or shown in Shepley that forms a valid basis for rejection of the Applicants claims. Accordingly, the claimed invention is not obvious over Shepley in view of Bach.* Shepley in view of Bach makes no sense.

INVENTION VIOLATES ACCEPTED INDUSTRY NORMS

A proper understanding of prior art shows that Bach, Shepley, and similar designers all rely upon fixed-length designs as disclosed in the Applicant’s Specification. Only tiny variations can be found for small adjustments that compensate for *human variation or defects in an instrument.* Prior art consistently teaches away from the Applicant’s invention. Prior-art mouthpiece design has remained substantially unchanged during the last 50 years or more. Bach’s teaching about the importance of fixed length in paragraph two of IDS #14 is still predominant today.

Claim 15 has been canceled and not rewritten, but it should be pointed out that Lorenzini has no value as a citation, since it falls in the family of woodwind instruments. Both the decorative and acoustic aspects of woodwind instrument are entirely outside the scope of valid subject matter for brass wind-related topics, like the one discussed herein.

SUMMARY OF REASONS FOR CONDITIONAL ALLOWANCE

- A set of undivided multi-length mouthpieces for a predetermined kind of brass-wind instrument is entirely novel
- A set of divided multi-length mouthpieces for a predetermined kind of brass-wind instrument is likewise novel as a *dependent Fortiori*.
- The invention is un-obvious because prior-art teaching fails to recognized the utility and benefits of a constant volumetric size for mouthpiece variations
- The sets solve a long-standing problem for inconsistent instrument tuning
- Timbre-correlated lengths provide a formerly unappreciated advantage of providing a dramatic visual selection criteria for musicians
- The invention relies upon a new principle of operation not formerly known
- The invention goes contrary to prior art and it "violates" current norms of using a standardized mouthpiece length for each kind of instrument
- No convincing reason has been put forth by the PTO for disallowance based upon prior art alone
- The invention produces unexpected results in the form of an unusually short "in-tune" mouthpiece, that has a backbore length of "zero"
- New or amended Claims have been put forth more narrowly and clearly
- Formal matters have been addressed to the best the Applicant's ability
- Informal matters have been addressed to the best of the Applicant's ability

The Applicant genuinely appreciates valid objections and discussions that will that will help make allowance achievable. The Applicant therefore re-invokes his formal request for MPEP 707.07(j) assistance, if so needed. The Applicant respectfully requests full reconsideration of these matters and he restates sincere appreciation of the efforts put forth by the PTO and the Primary Examiner.

The advantages of the present invention are clearly apparent over the art and not disclosed or suggested anywhere in the prior art. Accordingly, withdrawal of the rejections is respectfully requested and allowance of claims 12, and 17-25 is requested at as early a date as possible. This is intended to be complete response to the Official Action dated 5/4/05. PTO form 2038 is submitted herewith.

Respectfully submitted,

Robert Love, dated and mailed August 3, 2005

work phone number: 937-258-8000 ext. 158

enclosures: Rule 132 Affidavit,

Three sheets of replacement drawing,

Three sheets of canceled drawings marked with red ink,

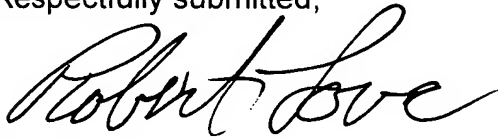
Certificate of Mailing,

Return Receipt postcard,

Form 2038

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Respectfully submitted,

A handwritten signature in cursive script that reads "Robert Love". The signature is written in black ink and is positioned below the text "Respectfully submitted,".

Robert Love,

dated and mailed August 3, 2005

work phone number: 937-258-8000 ext. 158

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Certificate of Mailing,

Return Receipt postcard,

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DRAWINGS

Three amended drawings replace, in whole, three original sheets. Red ink copies of three original drawing are enclosed here for reference.

Amended drawing containing Figures 2 and 8 have PTO-suggested markings for the location of variables d1, d2, L1, and L2. Additions to Figures 4 to 7 find support in combination of the original "12-Step method", Claims 9, Claim 12, Figure 9, and the Applicant's original element numbering system.

Amended drawing for Figure 9 has only symbols "v1" and "L3" placed next to prior-established written descriptions for v1 and L3 as supported by the original "12-Step method".

Amended drawing for Figure 10 has been corrected to present previously introduced elements (in page 17 of originally filed Specification, Claims 3, 4, & 5, and original Figure 10), for multiple views of a sectioned mouthpiece based upon original elements **81**, **82**, **83**, & **86** and using the drawing style of Shepley. The words "Prior Art" have been intentionally removed since the previously disclosed elements of page 17 , Figure 8, and sections form a dependent Fortiori patentable over prior-art (based upon the novel proportions and sizes of elements **81** & **82**). Note that novel backbone length **82** is scaled much longer than the prior-art backbone originally shown as element **101**. Cup-chamber **82** also scales much shorter than shown in original Figure 10. Added element number are all supported by previously disclosed subject matter.



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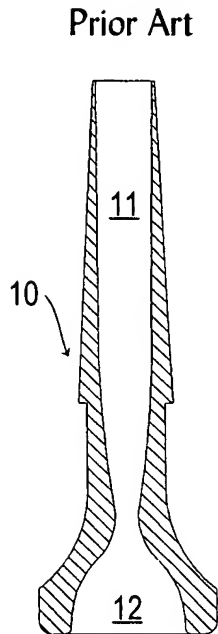


Fig. 1

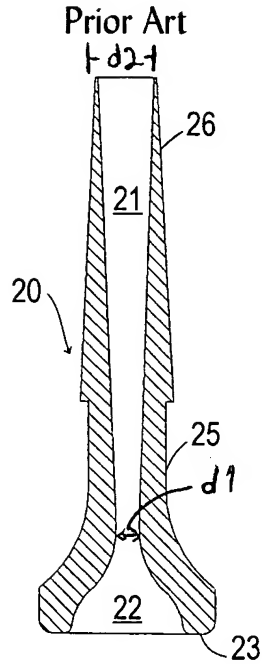


Fig. 2

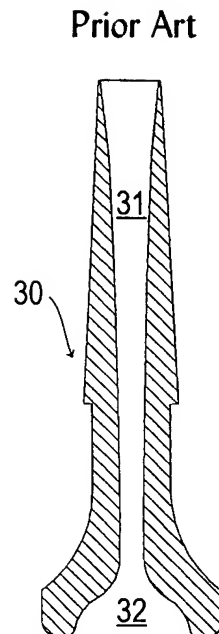


Fig. 3

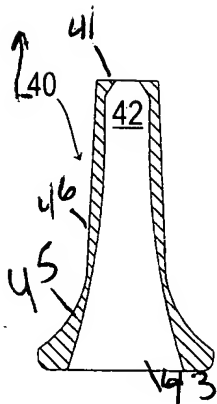


Fig. 4

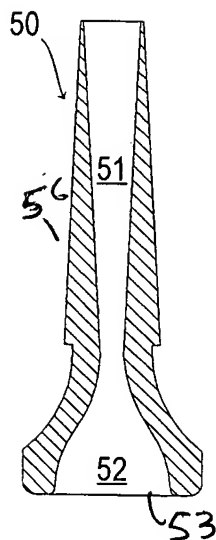


Fig. 5

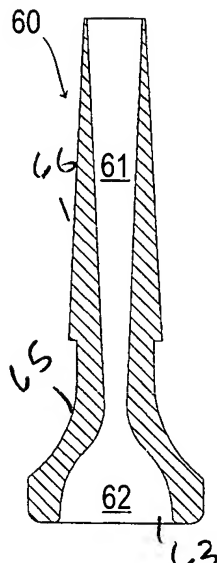


Fig. 6

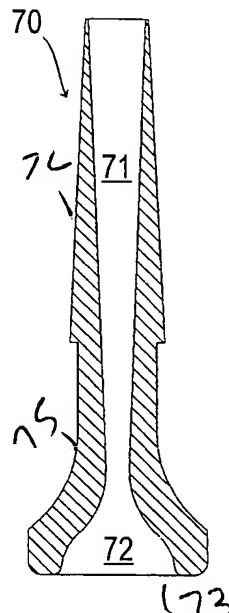


Fig. 7

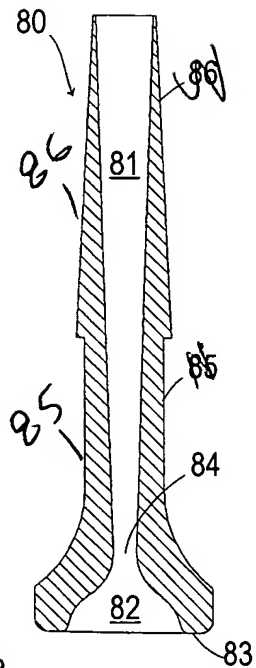
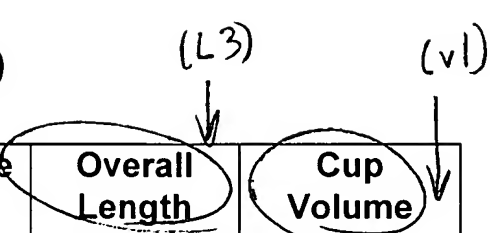


Fig. 8



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Fig. 9



Selected Mouthpiece	Tuning Slide Extension	Overall Length	Cup Volume
Yamaha 14E4 (Fig.1)	0.8cm	8.75cm	1.4cc
Yamaha 14C4 (Fig. 2)	1.2cm	8.75cm	1.1cc
Yamaha 14A4a (Fig. 3)	1.4cm	8.75cm	0.7cc
Fig. 4	1.1cm	4.39cm	3.4cc
Fig. 5	1.1cm	7.63cm	1.7cc
Fig. 6	1.1cm	8.16cm	1.4cc
Fig. 7	1.1cm	8.87cm	1.0cc
Fig. 8	1.1cm	9.73cm	0.6cc

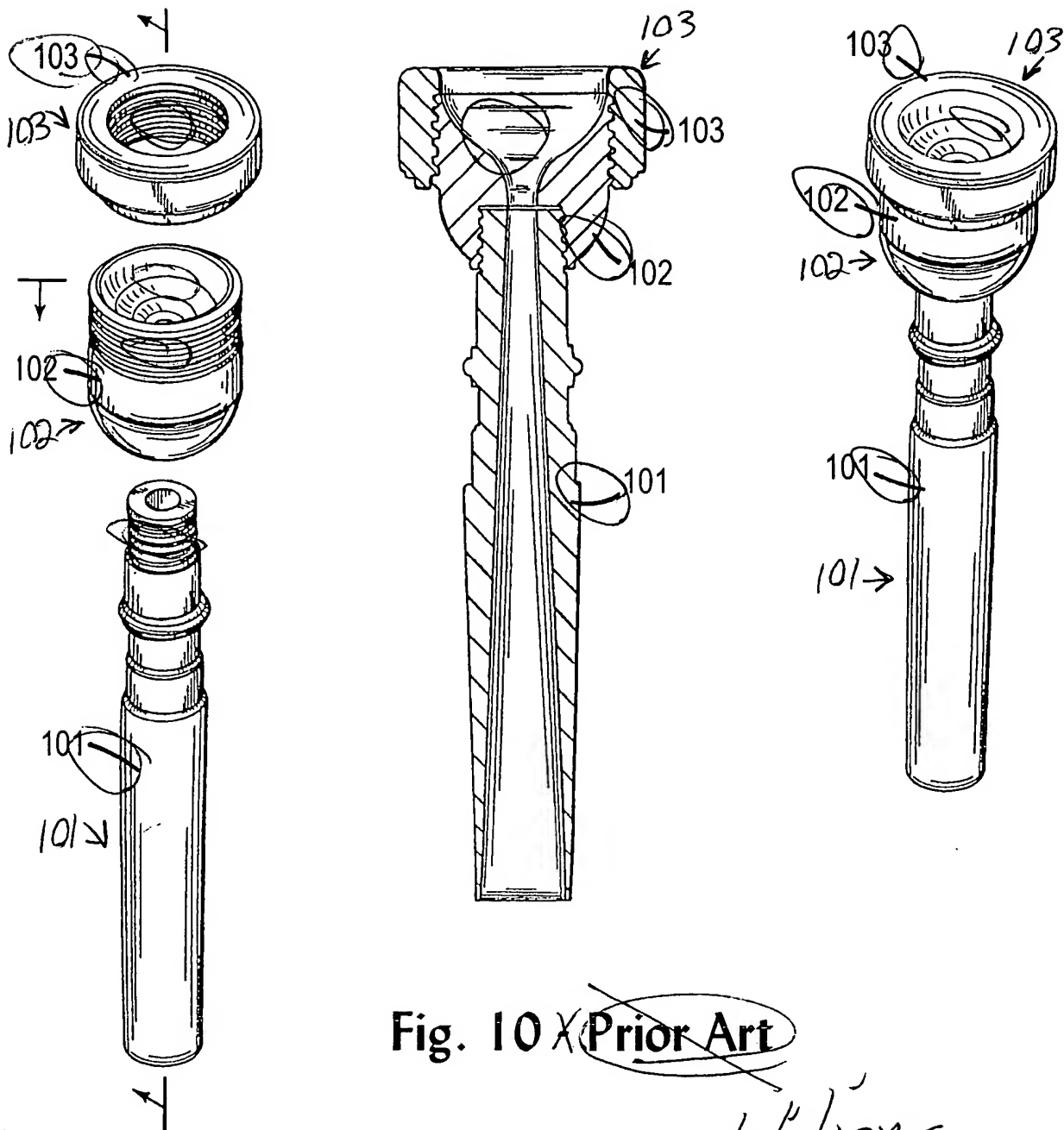


Fig. 10 X ~~Prior Art~~

Numerous additions
not shown here